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The Use Of Interactive Digital Media In I'Rab Learning: A Literature Review On Understanding Nahwu Rules

[1]Rizki Sanjaya, [2]Hilalludin, [3]Miftahus Sulhi
[1]Sekolah Tinggi Ilmu Tarbiyah Madani Yogyakarta, Indonesia
[2]Universitas Alma Ata Yogyakarta, Indonesia
[3]Islamic University of Madinah, Arab Saudi
Email: [1] rizkisanjay003@gmail.com hilalluddin34@gmail.com ,
miftahsolh@gmail.com[3]

Abstract
Understanding i'rab is an important aspect of Nahwu learning because it requires learners to understand grammatical rules, identify the syntactic position and function of words, determine grammatical markers, and apply rules within sentence structures. Difficulties in these areas may hinder learners' understanding and application of Nahwu rules, highlighting the need for more interactive learning media. This study aims to analyze the use of interactive digital media in i'rab learning and identify media characteristics relevant to supporting learners' understanding of Nahwu rules. This research employed a qualitative approach using library research. Data were collected from relevant scholarly literature on i'rab, Nahwu learning, digital learning media, and interactive digital media. The data were analyzed through reduction, categorization, comparison, interpretation, and synthesis. The findings indicate four main categories of difficulty in understanding i'rab: understanding i'rab concepts, determining the syntactic position and function of words, identifying grammatical markers, and applying grammatical rules in various sentence contexts. Interactive digital media offer relevant features for addressing these difficulties, including concept visualization, identification activities, interactive exercises, immediate feedback, self-directed navigation, and repetition. The study concludes that interactive digital media have greater pedagogical value when their features are aligned with specific learning difficulties and the functions required to address them. Thus, digital media should be selected based on learners' needs rather than application popularity or visual appeal. This alignment provides a conceptual foundation for developing more focused, interactive, and pedagogically appropriate media to support the understanding and application of Nahwu rules.

Keywords: interactive digital media, i'rab, Nahwu learning

INTRODUCTION

Arabic language learning requires students to understand not only vocabulary and language skills but also the grammatical system governing sentence structures. *Nahwu* (Arabic syntax) helps students identify word positions, relationships between sentence elements, and grammatical changes. Within Nahwu, *i'rab* indicates the grammatical function of words through changes in their final markers (Alemsyah et al., 2026). Therefore, understanding i'rab requires students not only to memorize grammatical rules but also to identify word functions and apply the rules appropriately in sentence contexts (Alhusna Waziadah et al., 2026).

However, students often experience difficulties applying Nahwu rules in practice. These difficulties include analyzing sentence structures, understanding grammatical terminology, mastering vocabulary, and determining appropriate grammatical markers. The abstract nature of Nahwu and instruction that emphasizes memorization may prevent students from connecting theoretical knowledge with practical application. Therefore, learning approaches are needed to help students understand grammatical concepts through examples, exercises, and opportunities to evaluate their understanding (Attruk & Satriadi, 2026).

Interactive digital media offer opportunities to support i'rab learning through sentence visualizations, interactive exercises, answer selection, immediate feedback, and independent learning activities. Various resources, including Nahwu-Sharaf applications, I'rab Al-Qur'an, Quizizz, Padlet, Canva, and instructional videos, have been used in Nahwu instruction (Fatihah et al., 2025). These media provide alternative ways to present grammatical material and encourage student participation. However, their contribution depends on how their features are integrated into learning activities and aligned with students' needs (Huda & Hikmah, 2026).

The use of digital media does not automatically make Nahwu easier to understand. Media that merely present digital versions of printed materials may not provide meaningful learning experiences. Their pedagogical value depends on their ability to address specific learning difficulties. In i'rab instruction, sentence-structure visualizations can help students recognize grammatical relationships, interactive exercises provide opportunities to apply rules, and immediate feedback helps students identify and correct errors.

Previous studies have discussed difficulties in learning Nahwu and i'rab, as well as the use of digital media in Arabic grammar instruction. Research has identified challenges in understanding and applying grammatical rules, while other studies have described various digital applications and their instructional uses (Firda et al., 2025). Interactive media also offer features such as concept visualization, immediate feedback, self-directed navigation, and gamification. Nevertheless, a systematic analysis connecting specific i'rab learning difficulties with the interactive characteristics of digital media remains necessary (Izzah et al., 2024).

This research gap highlights the need to examine how interactive digital media can address different difficulties in understanding i'rab. The novelty of this study lies in mapping the relationship between students' learning difficulties and the pedagogical functions of interactive media, rather than merely listing applications or testing a particular tool. For example, structural visualizations may support the identification of grammatical positions, interactive exercises may strengthen rule application, and immediate feedback may help students recognize errors (Khan et al., 2026).

This study is important because i'rab instruction requires learning approaches that connect grammatical rules with sentence structures and their practical application. Reviewing previous research can clarify the difficulties students encounter, the characteristics of interactive digital

media, and the support these media may provide. Such an analysis can also help identify media features that correspond to particular learning needs.

Accordingly, this study aims to analyze the use of interactive digital media in i'rab instruction by identifying difficulties in understanding i'rab and examining how interactive media characteristics can support students in understanding and applying Nahwu rules. Through a synthesis of previous research findings, this study seeks to provide a systematic overview of the relationship between learning difficulties, interactive media features, and their pedagogical functions in Nahwu instruction.

RESEARCH METHOD

This study employed a qualitative approach using a library research design to synthesize previous findings on interactive digital media in i'rab instruction. Secondary data were collected from journal articles, academic books, conference proceedings, and other relevant scientific publications through Google Scholar, Garuda, DOAJ, and journal portals. Searches used keywords related to i'rab learning difficulties, Nahwu instruction, and interactive digital media in Arabic language learning. Literature was selected based on its relevance, source clarity, and contribution to understanding i'rab difficulties and the use of interactive media. Relevant information was recorded and classified according to research focus, learning difficulties, media characteristics, forms of interactivity, and pedagogical functions (Furlong & Lester, 2023).

Data were analyzed through data reduction, classification, presentation, comparison, and synthesis. Relevant findings were grouped into themes covering i'rab learning difficulties, interactive media characteristics, instructional applications, and support for understanding Nahwu rules. Findings from different sources were compared to identify similarities, differences, patterns, and relationships between learning difficulties and media features. The results were then synthesized to map how

interactive digital media can support students in understanding and applying i'rab rules (Ahmed et al., 2025).

RESULTS AND DISCUSSION

Forms of Difficulty in Understanding I'rab

Understanding *i'rab* requires learners to comprehend grammatical concepts, identify the syntactic functions of words, determine appropriate grammatical markers, and apply grammatical rules in different sentence structures (Khan et al., 2026). These difficulties involve both conceptual understanding and practical application. Students may struggle to distinguish grammatical functions such as *fa'il*, *maf'ul bih*, *mubtada'*, *khabar*, *ism inna*, and *khabar inna*. They may also find it difficult to determine whether a word is *marfu'*, *manshub*, *majrur*, or *majzum* (Masnun et al., 2025). Even when learners memorize grammatical rules, applying them accurately within varied sentence structures remains challenging.

Table 1. Forms of Difficulty in Understanding I'rab

No.	Category of Difficulty	Main Indicator
1	Understanding i'rab concepts	Difficulty understanding the relationship between grammatical rules and sentence structure
2	Identifying grammatical positions	Difficulty determining the syntactic function of a word
3	Determining i'rab markers	Difficulty selecting the appropriate grammatical marker
4	Applying grammatical rules	Difficulty applying rules to different sentence structures

These categories demonstrate that learning *i'rab* involves interconnected processes. Learners must understand grammatical concepts before identifying word functions, determining markers, and applying rules within sentences. Therefore, instructional media should support these stages rather than focus solely on memorizing grammatical definitions (Mochmmad Fachturrahman Spama Putra et al., 2026).

Characteristics of Interactive Digital Media in Nahwu Learning

Interactive digital media can support Nahwu learning through applications, digital exercises, instructional videos, interactive concept maps,

and online learning platforms. However, their pedagogical value depends not primarily on the applications used, but on how their features facilitate learners' engagement with grammatical concepts. Several characteristics are particularly relevant to learning *i'rab* (Muslih et al., 2025). First, visualization presents grammatical relationships through colors, diagrams, concept maps, and highlighted sentence components. This feature helps learners recognize relationships between words and understand sentence structures.

Second, interactive exercises require learners to identify grammatical functions, select appropriate markers, and connect grammatical rules with examples. Third, immediate feedback enables learners to recognize incorrect answers and reconsider their analysis while completing an activity. Fourth, self-directed learning allows learners to repeat exercises and review materials according to their needs (Mustofa et al., 2025). Finally, gamification can introduce challenges and interactive activities that encourage participation. These characteristics should be selected according to their instructional purposes. Visualization supports conceptual understanding, identification activities develop syntactic analysis, exercises strengthen the application of rules, and feedback helps learners evaluate and correct their responses (Nurlaila et al., 2025).

Alignment between Digital Media Characteristics and Difficulties in Understanding I'rab

The effectiveness of interactive digital media depends on the alignment between its features and learners' specific difficulties. Different problems require different forms of instructional support. Abstract grammatical concepts, for example, require clear visual representations, whereas difficulties in identifying grammatical positions require activities that direct attention to the function of individual words. Similarly, interactive exercises can help learners determine appropriate *i'rab* markers, while immediate feedback enables them to identify errors and revise their answers. Exercises involving varied sentence structures can further support the

transfer of grammatical knowledge to new contexts (Rahmawati & Hidayati, 2025).

Table 2. Alignment of Interactive Digital Media with Difficulties in Understanding I'rab

Difficulty	Relevant Media Feature	Learning Activity	Pedagogical Function
Understanding concepts	Visualization and concept maps	Observing relationships between grammatical elements	Making abstract concepts more concrete
Identifying grammatical positions	Interactive identification and highlighting	Determining the function of words	Developing syntactic analysis
Determining i'rab markers	Interactive exercises and feedback	Selecting and checking grammatical markers	Connecting grammatical rules with their application
Applying rules in different structures	Varied and adaptive exercises	Analyzing sentences with different structures	Supporting the transfer of grammatical knowledge
Recognizing errors	Immediate feedback	Checking and correcting answers	Encouraging independent error correction

Table 2 illustrates that digital media should not be selected merely because it is technologically advanced. Its features need to address identifiable learning difficulties. This alignment makes media use more purposeful and connects learning activities with specific instructional objectives (Reno Ryan Saputra et al., 2026).

From Media as Technology to Media as a Pedagogical Tool

Interactive digital media should be understood as a pedagogical tool rather than simply a technological replacement for printed materials. Its contribution lies in enabling learners to engage actively with grammatical information through identifying, selecting, connecting, and applying rules, as well as evaluating their answers through feedback (Sabrina Puspo Nagari et al., 2026). This approach bridges the gap between declarative knowledge and procedural competence. Declarative knowledge refers to understanding

grammatical rules, while procedural competence involves applying those rules when analyzing sentences. Learners therefore need opportunities not only to memorize grammatical definitions but also to use them in meaningful analytical activities (Said & Ulwan, 2023). The central contribution of this study is its emphasis on the functional alignment between learning difficulties and media characteristics. Rather than merely listing digital applications or emphasizing general benefits such as motivation, this approach explains how particular interactive features can support specific aspects of *i'rab* learning.

Synthesis of Findings: A Model for Utilizing Interactive Digital Media to Support I'rab Understanding

The findings can be synthesized into a pedagogical alignment model consisting of three interconnected elements: learners' difficulties, interactive media characteristics, and pedagogical functions. The model begins by identifying the difficulties learners encounter and then selects media features that address those difficulties. Visualization supports conceptual understanding and recognition of grammatical relationships. Interactive identification activities help learners determine the syntactic functions of words. Exercises and immediate feedback support the selection of appropriate *i'rab* markers and correction of errors. Finally, exercises involving varied sentence structures provide opportunities to apply grammatical rules in different contexts (Said & Ulwan, 2023).

Figure 1. Pedagogical Alignment Model of Interactive Digital Media in I'rab Learning

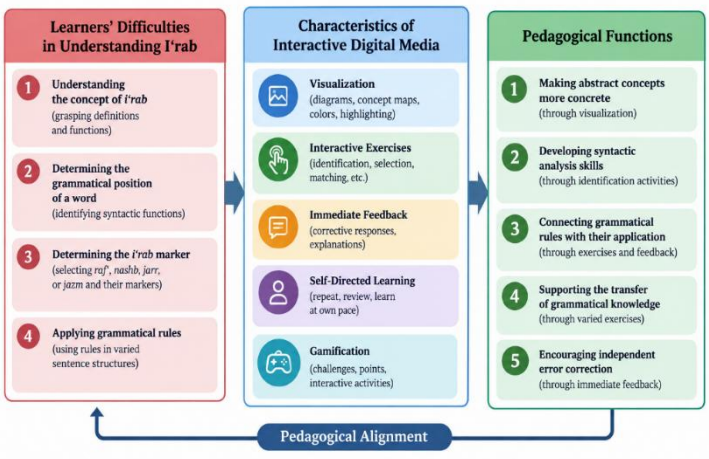


Figure 1. Pedagogical Alignment Model of Interactive Digital Media in I'rab Learning

The model emphasizes that instructional decisions should begin with learning needs rather than technological trends. Digital media becomes pedagogically meaningful when its interactive features are deliberately connected to learning objectives and the difficulties learners experience.

This model also highlights the relationship between understanding concepts and applying grammatical rules. Learning activities should guide students from recognizing grammatical structures to identifying word functions, determining *i'rab* markers, and applying rules in increasingly varied contexts. Through this sequence, interactive media can provide structured opportunities for practice, feedback, and independent learning (Sanjaya & Nasution, 2025).

Discussion of the Research Questions

Regarding the first research question, learners encounter four main difficulties in understanding *i'rab*: comprehending grammatical concepts, identifying the syntactic functions of words, determining appropriate grammatical markers, and applying grammatical rules within sentence contexts (Syarifah, 2024). These difficulties are interconnected because accurate application depends on understanding grammatical relationships and identifying the role of each word. Regarding the second research question, interactive digital media can support *i'rab* learning through visualization, interactive identification activities, structured exercises, immediate feedback, and opportunities for independent practice. The contribution of these features depends on their alignment with specific learning difficulties rather than their technological form alone.

Overall, digital transformation in Nahwu learning should involve more than transferring printed materials onto digital screens. It should create learning experiences in which students actively analyze grammatical structures, apply rules, receive feedback, and correct errors during the learning process. The proposed pedagogical alignment model offers a

framework for connecting these activities with the difficulties learners encounter when studying *i'rab* (Ubaidillah et al., 2026).

CONCLUSION

This study demonstrates that difficulties in understanding *i'rab* involve conceptual understanding, identifying grammatical functions, determining appropriate grammatical markers, and applying grammatical rules in different sentence contexts. Interactive digital media can support these learning processes through visualization, identification activities, interactive exercises, immediate feedback, and independent practice. Their pedagogical value lies in encouraging learners to analyze grammatical structures, apply rules, and correct errors rather than merely receive information.

The main contribution of this study is the proposed alignment between learners' difficulties, media interactivity, and pedagogical functions. Visualization supports conceptual understanding, identification activities develop syntactic analysis, exercises and feedback strengthen the application of grammatical rules, and varied examples facilitate learning transfer. Therefore, digital media should be selected according to specific learning needs rather than popularity or visual appeal. This alignment provides a conceptual foundation for developing more focused, interactive, and responsive media for *i'rab* learning.

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